catalyst, spheres, granules or pellets" as described on pag 3, paragraph 2 f DE '965) to automobile radiators as disclosed in DE '965. This is because the tackiness of the coating would cause debris from the road and/or airborne sources to adhere to the radiator, thereby impeding or blocking air flow and diminishing the ability of the radiator to dissipate heat. As engine cooling is the critical function of automobile radiators, the reduction in cooling efficiency caused by adhered debris could potentially cause severe engine damage. Accordingly, the use of a "tacky" coating on an automobile radiator would not be risked by those of ordinary skill in the art.

In the outstanding Final Office action, this argument is considered "defective because it does not consider that once the substrate coated with the clay-containing material is dried at elevated temperatures (please see col. 5 lns. 30-38 in U.S. Pat. 4,673,594 and also *expected to inherently occur in the production process of DE 40 07 965 A1*), it would reasonably be expected to adhere the catalyst or sorbent onto the radiator while losing its stickiness or tackiness. . ." (emphasis added; see the outstanding final Office action, Paper No. 14, page 7, lines 14-18). We respectfully submit that this assertion of "inherent" elevated-temperature curing in DE '965 is not supported. Nowhere is any elevated-temperature curing as disclosed in U.S. '594 taught or suggested in DE '965, and the Final Office action provides no reasoning as to why such a step is inherent to DE '965.

We respectfully submit that the heat-curing taught as part of the processing of a refractory fiber-covered furnace in U.S. '594 is in no way inherent to catalyst-coated radiator processing or operation: the typical operating temperature of a motor vehicle radiator is far less than the minimum 350°F curing temperature taught in column 5, line 33 of U.S. '594 (radiator operation temperature are typically between 90-100°C, or 194-212°F), and it makes no economic sense to add the cost of a heat-curing step to the radiator coating process. Moreover, the present specification provides evidence that elevated-temperature curing is NOT inherent to a radiator coating process. We invite the Examiner's attention to the present specification, where coated radiator core samples are dried - not cured - at only 90°C (194°F) for 30 minutes (see page 88, lines 1-2 of the specification). NOTE: There is a subsequent "heat treatment" of the coated samples at 150°C discussed on page 88, lines 5-6, but this is done to simulate aging in the sample (see page 83, line 29 to page 84, line 6 for a description of this heat-aging technique) and <u>not</u> as a

processing step in the production of a coated radiator cor . This relatively low-temperature drying process associated with radiator coatings, if hypothetically applied to the refractory fiber coating composition of U.S. '594, would leave moisture in the coating, thus maintaining the "tackiness" of the coating. As described above, such tackiness would be recognized as problematic for motor vehicle radiator applications by those of ordinary skill in the art, and utilizing an additional high-temperature curing step would be cost prohibitive. Thus, the legally required incentive for combining DE '965 and U.S. '594 as hypothetically proposed in the Final Office action is absent.

We also respectfully traverse the rejection of claims 1-4 and 6-8 as obvious over DE '965 and U.S. '594, further in view of selected pages of the books entitled Adhesives Handbook ("Shields") and Adhesive Bonding, Techniques and Applications ("Cagle"). Again, clay would not be used by those of ordinary skill in the art familiar with U.S. '594 because the "tackiness" attributed to the clay would be an undesirable characteristic for motor vehicle catalyst coating applications, as described above. In addition, Shields teaches that silicone resins provide a "tacky adhesive film" (see page 71, column 2, line 11) and which requires high-temperature curing "at 250°C to produce a hard, dry film" (see page 71, column 2, line 27). Again, tackiness is undesirable in radiator coating applications, and utilizing a high-temperature curing step to harden the silicone would be cost prohibitive in radiator coating applications, especially if required for a material with questionable adhesive qualities (see page 25, lines 19-20 of Cagle). Further, the filler-enhanced cohesive strength improvements alleged in Shields *require* a cost-prohibitive, high-temperature curing step ("Cohesive strength of cured resins is often increased by incorporating fillers. . ." emphasis added; see Shields, page 72, column 1, lines 3-5). Thus, we respectfully submit that Shields and/or Cagle fail to provide the legally required incentive for one of ordinary skill in the art to use silicone in the radiator coating application of DE '965.

We respectfully request that the arguments presented herein be considered as they are presented in direct response to arguments and references presented by the Examiner for the first time in the outstanding Final Office action. In light of the arguments presented herein, we respectfully submit that the claims, as amended, define a novel and nonobvious invention that merits patent protection. We therefore respectfully request that the entire application be allowed at an early date. If there remain any outstanding issues that the Examiner believes can be

addressed through discussion, we cordially invit the Examiner to contact the Applicants' undersigned representative at the telephone number provided b low.

This response is being filed within three months of the February 21, 2003 mailing date of the Final Office action. Accordingly, no fee is believed to be required, but if any is required, authorization is hereby granted to charge any such fee to deposit account 05-1070.

Respectfully submitted,

Russell G. Lindenfeldar
Reg. No. 39,750

ENGELHARD CORPORATION
101 Wood Avenue
PO Box 770
Iselin, NJ 08830
Tel. 732-205-7125

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